

Primary Connections Early Stage 1

On the move
Movement of humans and toys

RSCAM Ignition Years Curriculum Pack 7

- Identify and describe some ways in which humans and toys move
- Identify and describe some parts that enable humans and toys to move
- Compare movements made by humans and by different objects
- Group objects according to the way they move

Northern Territory Curriculum Framework 2009

SI KGP 2 Learners explore objects and events using all their available senses for more extended periods and respond actively.

EC KGP 2
Outcome: Learners recognise forces and energy sources around them.

Key Indicator: recognise different energy sources
Key Indicator: use common language to describe their awareness of light, sound or movement

Sources, patterns and uses

- [understand there are a range of movements](#)
- recognise some different ways that we can move

Transformers and transformations

- [understand it is possible to make objects move](#)
- explore forces in a variety of ways, eg pushing, bouncing, pulling, lifting, shoving
- demonstrate simple properties of light, sound and movement
- [understand there are a range of movements, lights and sounds](#)
- respond to and begin to use everyday science words that describe forces

SI KGP 3 Learners explore, use and respond to changes to objects and events, and indicate preferences based on experiences.

EC KGP 3
Outcome: Learners identify forces and energy sources around them.

Key Indicator: identify and describe different energy sources
Key Indicator: use common language to describe the effects of energy

Sources, patterns and uses

- [understand toys work in different ways, eg pushing, winding, batteries](#)
- identify and describe ways that humans and toys move

Transformers and transformations

- [understand objects can be moved by applying a push or a pull](#)
- describe forces in variety of ways, eg pushing, shoving, lifting, pulling
- identify sources of energy and describe the ways in which energy is used

Primary Connections Stage 2

Light fantastic
Transmission and use of light energy

RSCAM Primary Years Curriculum Pack 1

- Identify several sources of light and their uses
- Explain that light travels in straight lines
- Explain that we see an object when light reflects off the object into our eyes
- Compare the ability of transparent, translucent and opaque materials to transmit light
- Draw a ray diagram to explain how light from a source is reflected off an object into our eyes so that we see the object
- Explain how transparent, translucent and opaque materials affect the transmission of light

Smooth Moves
Effect of motion of different sized forces acting directly and indirectly

RSCAM Primary Years Curriculum Pack 8

- Use force arrows to show the direction in which forces are acting on an object
- Explain that forces can make things start moving
- Identify examples of forces that act in direct contact and at a distance
- Explain that effect of forces on the movement of an object
- Use different sized arrows to represent and compare different sized forces on the direction of movement of an object
- Explain that forces can make things stop moving
- Explain that a larger force has a greater effect on an object and a smaller force has less effect on the same object

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SI Band 2 Learners explore and engage with science in their interests and activities within and beyond school. They collaboratively plan, conduct and report on investigations related to their questions about living and non-living things and events. Learners begin to understand that in a fair test there are variables and the investigator only changes one of these to get an answer to their question they follow instructions, collecting and making limited records of their findings, saying whether or not what happened was expected.

EC Band 2
Outcome: Learners describe different sources of energy and ways in which energy can be transferred and transformed for different purposes.

Key Indicator: identify a variety of energy sources which can be used to perform specific tasks
Key Indicator: describe different situations in which light and movement energy is transferred or transformed

Sources, patterns and uses

- [understand people use energy in different ways for a variety of purposes](#)
- describe and record some of the ways in which light and movement energy are used

Transformers and transformations

- [understand energy can be transferred from one object to another](#)
- compare and predict the effects of large and small forces on the motion or shape of an object
- the sun is the main source of energy for heat and light for all things on earth
- people use different forms of energy
- investigate the properties of objects to determine the effect of the forces that act on them

SI Band 3 Learners apply their scientific understanding to make sense of their day-to-day experiences and interests. They are aware of the need for fair testing and the need to get more than one set of results in order to test their simple predictions (not guesses). They collect and organise numerical data and descriptive information using simple tables, diagrams and graphs; and identify main features, patterns and difficulties in the investigation.

EC Band 3
Outcome: Learners can illustrate and explain patterns of energy use in a variety of situations.

Key Indicator: explain patterns of light energy use at home and school
Key Indicator: create flow diagrams to illustrate energy transformations in everyday situations

Sources, patterns and uses

- [understand objects can be classified as sources or receivers of energy](#)
- investigate different materials to determine if they receivers or sources of light energy

Transformers and transformations

- [understand energy can be transformed from one type to another](#)
- investigate how light travels through some objects & how light from a source is reflected off an object into our eyes so that we see the object
- create flow diagrams to illustrate energy transformations

Key

SI = Science as Inquiry
EC = Energy and Change Science strand
[Blue text = Learners know and understand that...](#)
Black text = Learners are able to...
RSCAM = Remote Schools Curriculum and Assessment Materials
Learning Links portal: <https://portal.ntschoools.net/sites/LearningLinks/default.aspx>

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Primary Connections Stage 1

Sounds sensational
Properties, transmission and use of sound energy

RSCAM Early Primary Curriculum Pack 4

- Identify sources of sound
- Describe some uses of sound
- Describe the characteristics of sound, eg loud, soft ,high, low
- Identify materials through which sound travels, eg solids and water
- Describe vibrations as the cause of sound
- Compare sounds in terms of loudness and pitch
- Compare the transmission of sounds through different materials, eg solids, water and sound absorbers
- Explain how to change the pitch of a sound source

Push pull
Pushes and pulls in everyday situations

RSCAM Early Primary Curriculum Pack 8

- Identify and describe a push acting on an object in a familiar context
- Identify and describe a pull acting on an object in a familiar context
- Identify pushes and pulls acting on objects floating and sinking in water and falling through air
- Use force arrows to show the direction in which a push or pull is acting
- Given a familiar context, explain the effect of a push or pull on the movement of an object
- Given a familiar context, explain the effect of gravity on a falling or sinking object

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SI KGP Band 1 Learners describe some ways that scientific activities affect their community. They focus on a problem using a familiar situation, responding to teachers' suggestions to carry out simple activities that require observation and sharing of observations.

EC Band 1
Outcome: Learners describe different forms of energy and how energy is used for different purposes.

Key Indicator: identify and describe different sources of energy {sound} required for common tasks
Key Indicator: describe the effects of pushes and pulls in everyday situations

Sources, patterns and uses

- [understand energy exists in different forms including sound and movement](#)

Transformers and transformations

- [understand push and pull are different actions or forces](#)
- identify everyday forces as push or pull which make familiar things stop, move or change shape
- explore the way that different objects behave in different situations when different forces act upon them

SI Band 2 Learners explore and engage with science in their interests and activities within and beyond school. They collaboratively plan, conduct and report on investigations related to their questions about living and non-living things and events. Learners begin to understand that in a fair test there are variables and the investigator only changes one of these to get an answer to their question they follow instructions, collecting and making limited records of their findings, saying whether or not what happened was expected.

EC Band 2
Outcome: Learners describe different sources of energy and ways in which energy can be transferred and transformed for different purposes.

Key Indicator: identify a variety of energy sources which can be used to perform specific tasks
Key Indicator: describe different situations in which {sound/movement} energy is transferred or transformed

Sources, patterns and uses

- [understand people use energy in different ways for a variety of purposes, eg we use chemical energy to play sport, we use heat energy to cook food](#)

- describe and record some of the ways in which electrical, light, heat, sound and movement energy are used in the home or school

- identify pushes and pulls on objects when floating or sinking in water and falling through the air

Transformers and transformations

- [understand \(sound and movement\) energy can be transferred from one object to another](#)

- compare and predict the effects of large and small forces on the motion or shape of an object
- investigate the properties of objects to determine the effect of the forces that act on them

Primary Connections Stage 3

It's electrifying
Electrical energy is stored, transferred and transformed into other forms of energy: electric circuits

RSCAM Primary Years Curriculum Pack 1

- Describe a circuit in terms of components that form a continuous path for the flow of electrons
- Describe how energy is stored and transferred within an electric circuit
- Explain the characteristics of conductors and insulators in terms of categories of materials
- Explain energy transfer within a circuit in terms of a flow of electrons
- Explain that electrical energy is changed into other forms of energy in circuit and is not used up, ie energy is transformed and not destroyed
- Explain differences between conductors and insulators in terms of electron flow through these materials

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SI Band 3: Learners apply their scientific understanding to make sense of their day-to-day experiences and interests. They are aware of the need for fair testing and the need to get more than one set of results in order to test their simple predictions (not guesses). They collect and organise numerical data and descriptive information using simple tables, diagrams and graphs; and identify main features, patterns and difficulties in the investigation.

EC Band 3
Outcome: Learners can illustrate and explain patterns of energy use in a variety of situations.

Key Indicator: create flow diagrams to illustrate energy transformations in everyday situations

Sources, patterns and uses

- [understand objects can be classified as sources or receivers of energy](#)
- identify ways in which energy can be stored, eg chemicals in a battery, rubber bands, springs or fat in body cells
- investigate different materials to determine if they are conductors or insulators

Transformers and transformations

- [understand energy can be transformed from one type to another](#)
- investigate how different forms of energy are transferred, eg electrical energy (electrons) is transferred through wires in a circuit, moving your arms to move a tennis racquet to move the ball
- metals conduct electricity and plastics are insulators
- describe how simple machines convert (transform) energy from one form to another

SI Band 4 Learners consider the impact of applications of science and technology on themselves, society and the environment. They plan and conduct different types of investigations, taking account of the main variables; collect data using repeat trials or replicates; present data in appropriate formats, interpret patterns in data or information prepared in different formats; and make general suggestions for improving the investigation.

EC Band 4

Outcome: Learners consider the different ways that energy is obtained and how the properties of the energy system used impact upon the ways that energy is transferred and transformed and upon the environment.

Key Indicator: describe multiple effects of energy use and advantages of different energy sources

Key Indicator: explain how different materials can affect the way that energy is transferred and transformed

Sources, patterns and uses

- [understand different sources of energy require different processes to store them](#)

- identify substances that are good conductors or good insulators
- explain the differences between conductors and insulators in terms of the flow of electrons through the material

Transformers and transformations

- [understand energy forms have different characteristics, eg light moves through transparent objects, sound can move through materials such as air and water](#)
- explain the transfer of electrical energy in terms of the flow of electrons or current

- describe a circuit in terms of the components that create a continuous pathway for the flow of electrons, eg battery, light globe, wire, switch

- compare the effects of wiring light globes in series and parallel circuits